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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/802,021

03/16/2004

Gary A. Kinstler

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EXAMINER

COLLINS, TIMOTHY D

ART UNIT

PAPER NUMBER

3643

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,021

Applicant(s)

KINSTLER, GARY A.

Examiner

Timothy D. Collins

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-8, 12 and 17-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-11 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/16/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

The examiner acknowledges the applicants election of Species 1 sub-species A. The claims readable on the election are claims 9-11 and 13-16, all of the other claims have been withdrawn.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim states that the exit trajectory is "linear" however it is unclear exactly how it is linear. The claim lacks any reference with which to relate the term linear. Also it is unclear if the term linear refers to a completely straight path away from the space vehicle or if it refers to a path that is a linear curve which does not change curvature or increase curvature while extending radially. Also it is unclear exactly how a trajectory can be exactly linear. Inherently there will be some deviation from any trajectory and throughout the flight the trajectory will have to be adjusted in some way. Because of the ambiguities in this claim it has not been further treated on the merits.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 9, 11 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by the launch of the DirecTV-5 satellite a Proton rocket from the Baikonur Cosmodrome in Kazakhstan on May 7, 2002 as seen in <http://www.spaceflightnow.com/proton/dtv5/> (hereinafter called DTV).

a. Re claim 9, DTV discloses an apparatus for maneuvering an exit vehicle (DTV-5 Satellite) departing from a rotating space vehicle (Earth). The apparatus having processing circuitry (inherently in the launch facility responsible for the control of the Proton Rocket), the circuitry capable of determining the spin axes of the Earth and the spin rate of the Earth all of which are needed and inherent to send a satellite or "exit vehicle" to a geosynchronous orbit. Also DTV discloses a launch mechanism (the Proton rocket) which has an exit (departure) velocity in the spin axis planes. Also DTV discloses a thruster device (the thrusters of the Proton rocket and the thrusters of the DTV-5 satellite (which are inherently on the satellite to allow it to maintain position at least for the purpose of sending usable signals to Earth for TV). The thrusters being capable of imparting an orthogonal component to the velocity to provide lateral acceleration, at least as seen in that the geosynchronous satellite must eventually match the Earth's rotation so as to

be "geosynchronous". Note: the language after the ":" of the 3 phrases under the preamble of the claim are all considered functional language and the DTV reference must therefore only be capable of performing these functions.

b. Re claim 11, DTV discloses inherently that along the flight path the DTV-5 satellite has a departure velocity that remains constant in that at least at the end of the flight path in geosynchronous orbit the velocity is constant or the satellite would move relative to the Earth and would not be geosynchronous.

c. Re claim 14, DTV discloses inherently that the thrusters apply lateral thrust to provide a turn rate which is in synchronization with the space vehicle (Earth) because that is exactly how a geosynchronous satellite remains geosynchronous.

5. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by the use of the Manned Maneuvering Unit in conjunction with the STS-51-A as seen in <http://www.nationmaster.com/encyclopedia/Manned-Maneuvering-Unit>, (hereinafter called MMU).

d. Re claim 9, MMU discloses an apparatus for maneuvering an exit vehicle (the MMU unit) departing from a rotating space vehicle (the STS, space shuttle). The STS is capable of rotation about any axis and inherently has processing circuitry (the flight control computers which are onboard). These control computers are capable of determining the spin axes of the STS and the spin rate of the STS all of which are needed and inherent to control the STS. Also MMU

Art Unit: 3643

discloses a launch mechanism (the astronauts legs) for launching the exit vehicle (the MMU) from the space vehicle (STS) cargo bay. Also MMU discloses a thruster device (the MMU control thrusters) which are for applying lateral thrust to the vehicle proportionate to the rate of the rotating space vehicle. Note: the language after the ":" of the 3 phrases under the preamble of the claim are all considered functional language and the DTV reference must therefore only be capable of performing these functions.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10, 15 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over DTV as applied to claims 9, 11 and 14 above.

a. Re claim 10, DTV does not specifically disclose that the processing circuitry determines the root-sum-square of angular velocities of the space vehicle, however the examiner takes official notice that root-sum-square determinations are old and well known in the art of mathematics and engineering for determining the combined or effective movement of an object in 3

Art Unit: 3643

dimensions. Therefore it would have been obvious to one of ordinary skill in the art to have used this method of determining the movement of the Earth in DTV so as to allow for the simple and efficient launch of the DTV satellite using common mathematical equations for the motion of the Earth.

b. Re claims 15 and 16, DTV does not specifically disclose that the turn rate is slower or faster than the space vehicle (Earth) however it is old and well known in the art to either slow or speed up to match the spot which is to be the ground reference for a geosynchronous satellite. Therefore it would have been obvious to one of ordinary skill in the art to either slow down or speed up the turn rate so as to match the ground position that is being targeted for satellite TV service by the DTV-5 satellite.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art discloses space vehicles and exit vehicles.

a. USPN 5305970


b. USPN 3744739

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy D. Collins whose telephone number is 571-272-6886. The examiner can normally be reached on M-F, 7:00-3:00, with every other Fri. off.

Art Unit: 3643

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 571-272-6891. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Timothy D. Collins
Patent Examiner
Art Unit 3643